

FIG. 1

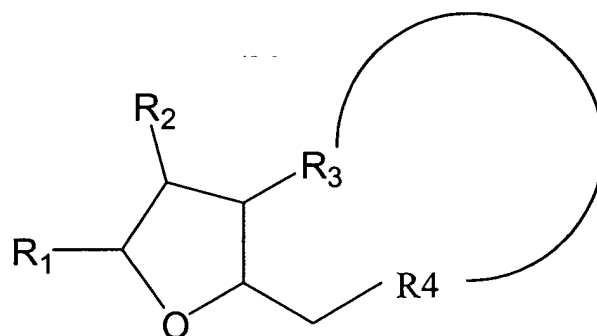
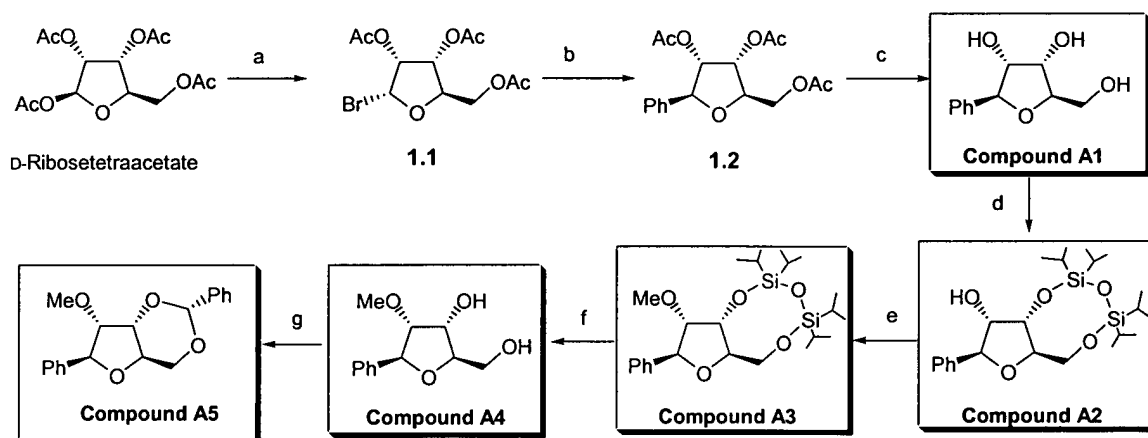
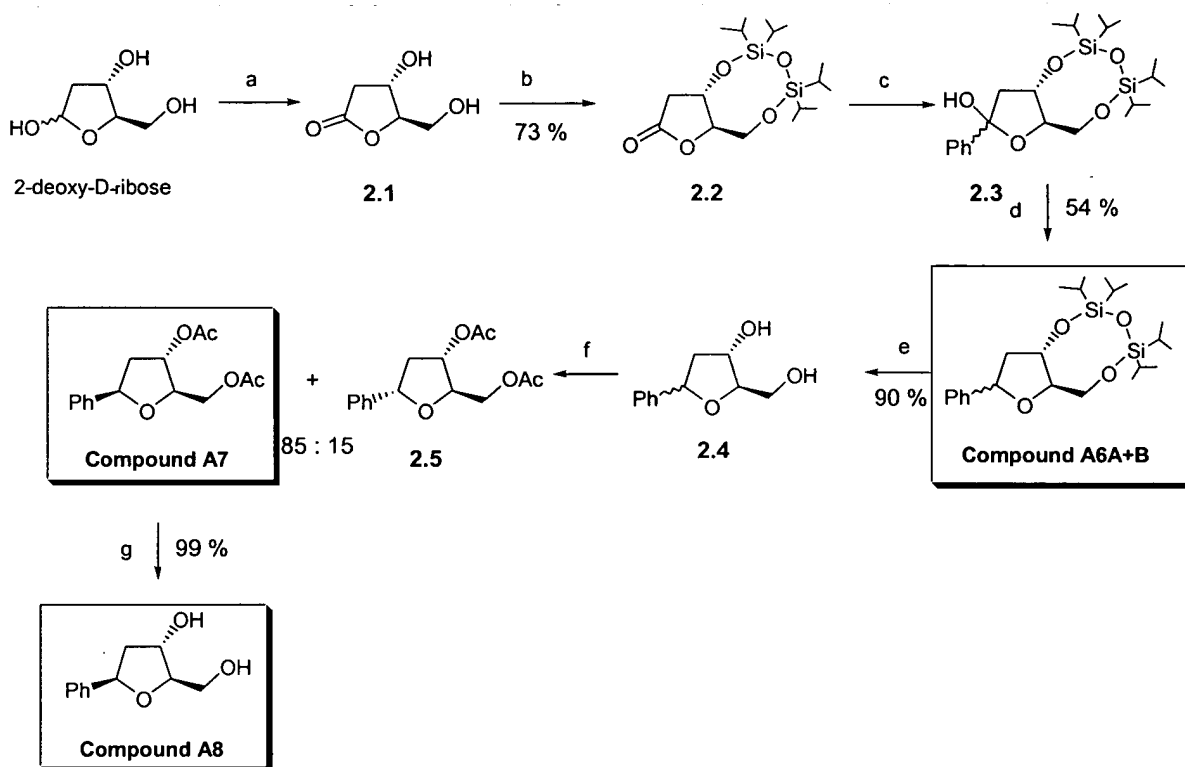


FIG. 2



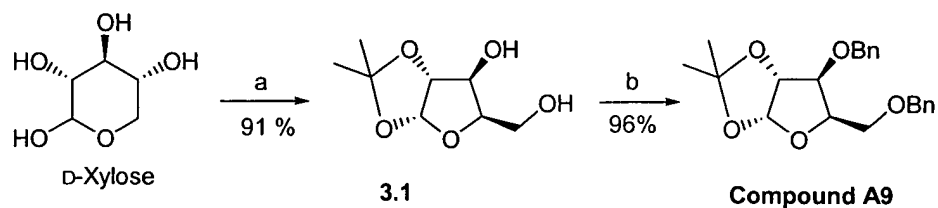
a) HBr, HOAc, RT ; b) (i) phenylmagnesium bromide, diethylether, 0°C to RT; (ii) Ac₂O, pyridine, RT; c) K₂CO₃, MeOH/THF (1:1), RT; d) 1,3-dichloro-1,1,3,3-tetraisopropylidisiloxane, pyridine, RT; e) Ag₂O, MeI, reflux; f) Bu₄NF, THF, RT; g) PhCHBr₂, pyridine

FIG. 3



a) Br₂, H₂O, RT; b) TIPDSCl₂, imidazole, DMF, RT, 24h; c) PhLi, THF, -78 °C, 1h; d) Et₃SiH, BF₃·Et₂O, CH₂Cl₂, -78 °C, 4h; e) TBAF, THF, RT, 2h; f) AC₂O, pyr, DMAP, 14 h, RT, column chromatography; g) K₂CO₃, MeOH, THF, RT, 5h

FIG. 4



a) (i) acetone, CuSO₄·anh, H₂SO₄, 24h, RT; (ii) 0.1 M HCl-sol., MeOH, 4h, 40°C;
b) (i) NaH, DMF, 30 min, 0°C; (ii) BnBr, overnight, RT